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SHEET 1 OF 1

INFORMATION DISCLOSURE  
CITATION IN AN  
APPLICATION

(PTO-1449)

ATTY. DOCKET NO.  
004066  
USA/Consilium/Consilium

SERIAL NO.  
09/363,966

**APPLICANT**

<b>FILING DATE</b> July 29, 1999	<b>GROUP</b> 2125
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**U.S. PATENT DOCUMENTS**

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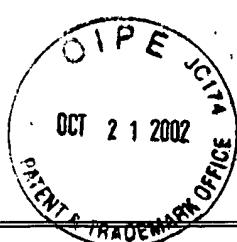
## FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
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Sm	2 347 885 A	09/20/00	GB			X	
Sm	WO 01/15865 A1	03/08/01	WO			X	

**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**

SEARCHED	October 15, 2002. International Search Report prepared by the European Patent Office for PCT/US02/19062.
SEARCHED	
EXAMINER <i>Garber</i>	DATE CONSIDERED <i>12/12/02</i>

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**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**

5n6	Communication Pursuant to Article 96(2) EPC for European Patent Application No. 00 115 577.9. July 23, 2002.
EXAMINER <i>Garland</i>	DATE CONSIDERED <i>12/12/02</i>

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2121 2145

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John F. ARACKAPARAMBIL et al.FILING DATE  
July 29, 1999GROUP  
2121 2145

## U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	4,698,766	10/06/87	Entwistle et al.	364	468	05/17/85
	4,967,381	10/30/90	Lane et al.	364	551.0	07/06/89
	5,208,765	05/04/93	Turnbull	364	552	07/20/90
	5,226,118	07/06/93	Baker et al.	395	161	01/29/91
	5,231,585	07/27/93	Kobayashi et al.	364	468	06/20/90
	5,420,796	05/30/95	Weling et al.	364	468	12/23/93
	5,469,361	11/21/95	Moyne	364	468	06/06/94
	5,525,808	06/11/96	Irie et al.	250	548	12/20/94
	5,586,039	12/17/96	Hirsch et al.	364	468.0	02/27/95
	5,603,707	02/18/97	Trombetta et al.	664	383	11/28/95
	5,664,987	09/09/97	Renteln	451	21	09/04/96
	5,812,407	09/22/98	Sato et al.	364	474.35	08/12/97
	5,828,778	10/27/98	Hagi et al.	382	145	06/12/96
	5,832,224	11/03/98	Fehskens et al.	395	200.53	06/14/96

## FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
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	61-171147	08/01/86	Japan				X
	6-184434	07/05/94	Japan				X
	0 621 522 A2	10/26/94	Europe				X
	8-50161	02/20/96	Japan				X
	8-304023	11/22/96	Japan				X

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

gr ~	February 1984. "Method and Apparatus of in Situ Measurement and Overlay Error Analysis for Correcting Step and Repeat Lithographic Cameras." <i>IBM Technical Disclosure Bulletin</i> , pp. 4855-4859.
gr ~	October 1984. "Method to Characterize the Stability of a Step and Repeat Lithographic System." <i>IBM Technical Disclosure Bulletin</i> , pp. 2857-2860.

EXAMINER

*Harley*

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U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	5,859,964	01/12/99	Wang et al.	395	185.01	10/25/96
	5,863,807	01/26/99	Jang et al.	438	14	03/15/96
	5,870,306	02/09/99	Harada	364	474.11	06/13/97
	5,903,455	05/11/99	Sharpe, Jr. et al.	364	188	12/12/96
	5,916,016	06/29/99	Bothra	451	398	10/23/97
	5,923,553	07/13/99	Yi	364	468.17	10/05/96
	5,930,138	07/27/99	Lin et al.	364	468.15	09/10/97
	5,940,300	08/17/99	Ozaki	364	468.28	05/08/97
	5,960,214	09/28/99	Sharpe, Jr. et al.	395	835	12/04/96
	5,963,881	10/05/99	Kahn et al.	702	35	10/20/97
	5,982,920	11/09/99	Tobin, Jr. et al.	382	145	01/08/97
	6,041,270	03/21/00	Steffan et al.	700	121	12/05/97
	6,078,845	06/20/00	Friedman	700	104	11/25/96
	6,112,130	08/29/00	Fukuda et al.	700	121	10/01/97
	6,148,246	11/14/00	Kawazome	700	121	06/10/98

FOREIGN PATENT DOCUMENTS

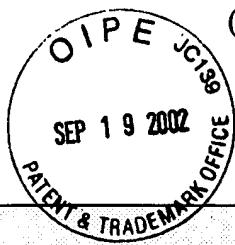
EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No
	0 747 795 A2	12/11/96	Europe			X	
	10-173029	06/26/98	Japan				X
	0 895 145 A1	02/03/99	Europe			X	
	11-126816	05/11/99	Japan				X

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

sr b	Schmid, Hans Albrecht. 1995. "Creating the Architecture of a Manufacturing Framework by Design Patterns." Austin, Texas: OOPSLA.
sr b	Baliga, John. July 1999. "Advanced Process Control: Soon to be a Must." Cahners Semiconductor International. <a href="http://www.semiconductor.net/semiconductor/issues/issues/1999/jul99/docs/feature1.asp">www.semiconductor.net/semiconductor/issues/issues/1999/jul99/docs/feature1.asp</a>
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U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	6,175,777	01/16/01	Kim	700	121	01/16/98
	6,178,390	01/23/01	Jun	702	170	09/08/98
	6,185,324	02/06/01	Ishihara et al.	382	149	01/31/95
	6,192,291	02/20/01	Kwon	700	121	10/08/98
	6,197,604	03/06/01	Miller et al.	438	14	10/01/98
	6,211,094	04/03/01	Jun et al.	438	758	08/23/99
	6,226,792	05/01/01	Goiffon et al.	71	11	10/14/98
	6,230,069	05/08/01	Campbell et al.	700	121	06/26/98
	6,236,903	05/22/01	Kim et al.	700	121	09/25/98
	6,240,330	05/29/01	Kurtzberg et al.	700	121	05/28/97

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No
	11-135601	05/21/99	Japan				X
	WO 00/05759	02/03/00	WO			X	
	WO 00/35063	06/15/00	WO			X	

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

5r o	July 5, 2001. "Motorola and Advanced Micro Devices Buy ObjectSpace Catalyst Advanced Process Control Product for Five Wafer fabs." Semiconductor FABTECH. <a href="http://www.semiconductorfabtech.com/industry.news/9907/20.07.shtml">www.semiconductorfabtech.com/industry.news/9907/20.07.shtml</a>
5r o	October 15, 2001. Search Report prepared by the Austrian Patent Office for Singapore Patent Application No. 200004286-1.
5r o	Johnson, Bob. June 10, 2002. "Advanced Process Control Key to Moore's Law." Gartner, Inc.
5r o	July 9, 2002. International Search Report prepared by the European Patent Office for PCT/US01/24910.
5r o	July 29, 2002. International Search Report prepared by the European Patent Office for PCT/US01/27407.
5r o	Sonderman, Thomas. 2002. "APC as a Competitive Manufacturing Technology: AMD's Vision for 300mm." AEC/APC.

EXAMINER

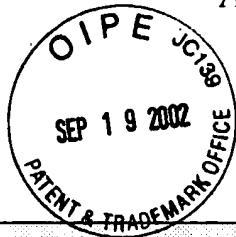
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John F. ARACKAPARAMBIL et al.

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July 29, 1999

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U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	6,240,331	05/29/01	Yun	700	121	08/18/98
	6,248,602	06/19/01	Bode et al.	438	14	11/01/99
	6,252,412	06/26/01	Talbot et al.	324	750	01/08/99
	6,292,708	09/18/01	Allen et al.	700	121	06/11/98
	6,298,274	10/02/01	Inoue	700	112	09/01/99
	6,303,395	10/16/01	Nulman	438	14	06/01/99
	6,345,315	02/05/02	Mishra	709	329	08/12/98
	6,366,934	04/02/02	Cheng et al.	707	513	06/02/99

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No
	WO 00/79355 A1	12/28/00	WO			X	
	2001-76982	03/23/01	Japan				X
	WO 01/33501 A1	05/10/01	WO			X	

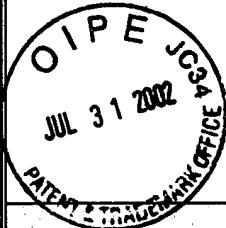
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

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<i>Marla</i>	12/12/01

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## U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	5,220,517	06/15/93	Sierk et al.	364	550	08/31/90
	5,329,463	07/12/94	Sierk et al.	364	510	01/13/93
	5,495,417	02/27/96	Fuduka et al.	364	468	03/16/93
	5,497,316	03/05/96	Sierk et al.	364	140	04/04/95
	5,503,707	04/02/96	Maung et al.	156	626,1	09/22/93
	5,508,947	04/16/96	Sierk et al.	364	571-01	05/13/94
	5,657,254	08/12/97	Sierk et al.	364	571,05	04/15/96

## FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO./ PUBLICATION NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No
	2,050,247	08/29/91	Canada			X	
	2,165,847	08/29/91	Canada			X	
	2,194,855	08/29/91	Canada			X	
	05-151231	06/18/93	Japan			X	
	05-216896	08/27/93	Japan			X	
	05-266029	10/15/93	Japan			X	
	06-110894	04/22/94	Japan			X	
	06-176994	06/24/94	Japan			X	
	06-252236	09/09/94	Japan			X	
	06-260380	09/16/94	Japan			X	
	1072967A3	11/21/01	Europe			X	

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

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<i>Maung</i>	12/12/02

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5n6	5,694,325	12/02/97	Fukuda et al.	364	468,18	11/22/95
5n6	5,838,595	11/17/98	Sullivan et al.	364	578	11/25/96

FOREIGN PATENT DOCUMENTS

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OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

5n6	Zhou, Zhen-Hong and Rafael Reif. August 1995. "Epi-Film Thickness Measurements Using Emission Fourier Transform Infrared Spectroscopy—Part II: Real-Time <i>in Situ</i> Process Monitoring and Control." <i>IEEE Transactions on Semiconductor Manufacturing</i> , Vol. 8, No. 3.
5n6	Telfeyan, Roland, James Moyne, Nauman Chaudhry, James Pugmire, Scott Shellman, Duane Boning, William Moyne, Arnon Hurwitz, and John Taylor. October 1995. "A Multi-Level Approach to the Control of a Chemical-Mechanical Planarization Process." Minneapolis, Minnesota: 42 <sup>nd</sup> National Symposium of the American Vacuum Society.
5n6	Chang, E., B. Stine, T. Maung, R. Divecha, D. Boning, J. Chung, K. Chang, G. Ray, D. Bradbury, O. S. Nakagawa, S. Oh, and D. Bartelink. December 1995. "Using a Statistical Metrology Framework to Identify Systematic and Random Sources of Die- and Wafer-level ILD Thickness Variation in CMP Processes." Washington, D.C.: International Electron Devices Meeting.
5n6	Smith, Taber, Duane Boning, James Moyne, Arnon Hurwitz, and John Curry. June 1996. "Compensating for CMP Pad Wear Using Run by Run Feedback Control." Santa Clara, California: VLSI Multilevel Interconnect Conference.

EXAMINER

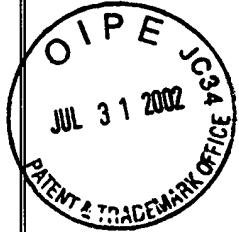
Balasubramanian

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SNB	Boning, Duane, William Moyne, Taber Smith, James Moyne, Roland Telfeyan, Arnon Hurwitz, Scott Shellman, and John Taylor. October 1996. "Run by Run Control of Chemical-Mechanical Polishing." <i>IEEE Trans. CPMT (C)</i> , Vol. 19, No. 4, pp. 307-314.
SNB	Edgar, Thomas F., Stephanie W. Butler, Jarrett Campbell, Carlos Pfeiffer, Chris Bode, Sung Bo Hwang, and K.S. Balakrishnan. May 1998. "Automatic Control in Microelectronics Manufacturing: Practices, Challenges, and Possibilities." <i>Automatica</i> , Vol. 36, pp. 1567-1603, 2000.
SNB	Chemali, Chadi El, James Moyne, Kareemullah Khan, Rock Nadeau, Paul Smith, John Colt, Jonathan Chapple-Sokol, and Tarun Parikh. November 1998. "Multizone Uniformity Control of a CMP Process Utilizing a Pre and Post-Measurement Strategy." Seattle, Washington: SEMETECH Symposium.
SNB	Moyne, James. October 1999. "Advancements in CMP Process Automation and Control." Hawaii: (Invited paper and presentation to) Third International Symposium on Chemical Mechanical Polishing in IC Device Manufacturing: 196 <sup>th</sup> Meeting of the Electrochemical Society.
SNB	Lee, Brian, Duane S. Boning, Winthrop Baylies, Noel Poduje, Pat Hester, Yong Xia, John Valley, Chris Koliopoulos, Dale Hetherington, HongJiang Sun, and Michael Lacy. April 2001. "Wafer Nanotopography Effects on CMP: Experimental Validation of Modeling Methods." San Francisco, California: Materials Research Society Spring Meeting, 2001.
SNB	NovaScan 2020. Printed February 2002. "Superior Integrated Process Control for Emerging CMP High-End Applications."
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<i>Harold</i>	<i>12/12/02</i>

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